



Assurance Statement

Terms of Engagement

This Assurance Statement has been prepared for Northrop Grumman, Incorporated (Northrop Grumman).

LRQA Americas Sustainability, Inc., (LRQA-AS) a member of the Lloyd's Register group of entities, was commissioned by Northrop Grumman to assure its Greenhouse Gas (GHG) Emissions Inventory and GHG Assertion for the calendar year (CY) 2012.

The GHG Emissions Inventory includes direct GHG emissions, energy indirect GHG emissions and other indirect GHG emissions. The energy indirect GHG emissions were adjusted to account for the purchase of Renewable Energy Credits (RECs). The other indirect GHG emissions cover business travel, including air travel, rental cars, and hotel accommodation. The final GHG Assertion was prepared by Northrop Grumman and submitted to LRQA via email dated May 31, 2013, which states that in CY 2012 Northrop Grumman's global operations emitted:

| Scope | tCO ₂ e |
|-------------------------------|--------------------|
| Direct GHG emissions | 151,378 |
| Energy Indirect GHG emissions | 494,142 |
| Total GHG emissions | 645,520 |
| Total with RECs | 638,886 |
| Other Indirect GHG emissions | 153,498 |

Management Responsibility

The management of Northrop Grumman was responsible for preparing the GHG data and information disclosed in the GHG Emissions Inventory and GHG Assertion and for maintaining effective internal controls over the data and information disclosed. LRQA-AS's responsibility was to carry out an assurance engagement on the GHG data and information, as presented in the GHG Emissions Inventory and GHG Assertion, in accordance with our contract with Northrop Grumman.

Ultimately, the GHG Emissions Inventory and GHG Assertion have been approved by, and remain the responsibility of Northrop Grumman.

LRQA-AS Approach

Our verification has been conducted in accordance with ISO14064 – 3:2006 *Specification with guidance for validation and verification of greenhouse gas assertions*, to provide assurance that the GHG Emissions Inventory and GHG Assertion for Northrop Grumman have been prepared in accordance with the WBCSD/WRI GHG Protocol: *A Corporate Accounting and Reporting Standard* and the Northrop Grumman GHG Reporting Protocol, Version 2.3.

To form our conclusion, the assurance engagement was undertaken as a sampling exercise and covered the following activities:

- Conducted site visits to each of the five Northrop Grumman operating sectors (Aerospace, Electronics, Information Systems, Technical Services, and Enterprise Shared Services) and reviewed primary data and information related to the direct and energy indirect GHG emissions for 2012 included in the entity level GHG Emissions Inventory;
- Reviewed the processes for the management of data and information related to the direct, energy indirect, and other indirect GHG emissions used at the corporate level and by each Northrop Grumman operating sector;
- Interviewed relevant staff responsible for managing and maintaining data and information and for preparing the GHG Emissions Inventory at the sector and corporate levels;



- Verified the direct and energy indirect GHG emissions for CY 2012 included in the GHG Emissions Inventory back to source using data and information made available at the facility level; and
- Verified the other indirect GHG emissions for CY 2012 through a review of aggregated level data and information and calculation spreadsheets provided by Northrop Grumman.

Level of Assurance and Materiality

The opinion expressed in this Assurance Statement for direct and energy indirect GHG emissions was formed on the basis of a reasonable level of assurance and at a materiality of 5%. For other indirect GHG emissions it was on the basis of a limited level of assurance and at the materiality of the professional judgment of the verifier.

LRQA-AS's Opinion

Based on LRQA-AS's approach, the total direct GHG emissions and energy indirect GHG emissions disclosed in the GHG Emissions Inventory and GHG Assertion for Northrop Grumman for CY 2012 are materially correct, and the GHG Inventory has been prepared in accordance with the WBCSD/WRI GHG Protocol and the NG GHG Protocol.

In addition, LRQA-AS did not find any evidence that the data and information presented in the other indirect GHG Emissions Inventory and GHG Assertion is not materially correct and prepared in accordance with the WBCSD/WRI GHG Protocol and the NG GHG Protocol.

Recommendations

It is recommended that Northrop Grumman considers the following improvements to its GHG data management system:

- Implementation of sector-specific GHG Protocols to increase transparency and ensure consistency from year to year. In addition, these sector-specific GHG Protocols would assist in ensuring the integrity of the GHG Inventory through major procedural changes (e.g., switching from ENX and the use of NICS/EnCap). Specific tasks noted during verification that may be different between sectors include: QA/QC procedures, real estate reporting programs (though all based on REMS), process emission calculation procedures, estimation procedures, billing cycles, and specific details for data collection sources.
- Implementation of a document retention procedure. Though Northrop Grumman was able to provide all documents requested, a documented procedure would help Northrop Grumman remain consistent through adjustments to the NICS/EnCap system.
- Develop a standardized system for tracking company vehicle fuel use. Vehicle fuel tracking systems are fractured, with no fully centralized management system, even at the sector level. While GHG emissions from vehicles are relatively small in the Northrop Grumman inventory, there is some uncertainty in this category because of the different ways in which records are currently being maintained.

Signed:

Dated: May 31, 2013

A handwritten signature in black ink that reads "Heather Moore".

Heather Moore, P.E.

Lead Verifier

On behalf of LRQA Americas Sustainability, Inc.

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LRQA-AS Reference: RMA10112A



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